UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/910,669	07/20/2001	Gregory S. Francis	920070.406	3153

27370	7590	07/25/2005

OFFICE OF THE STAFF JUDGE ADVOCATE
U.S. ARMY MEDICAL RESEARCH AND MATERIEL COMMAND
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EXAMINER
ZHOU, TING

ART UNIT	PAPER NUMBER
2173	

DATE MAILED: 07/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/910,669	FRANCIS ET AL.
	Examiner	Art Unit
	Ting Zhou	2173

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>05 May 2005</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-27</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-8, 10-17 and 19-26</u> is/are rejected.

7)☒ Claim(s) <u>9,18 and 27</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   The Request for Continued Examination (RCE) filed on 5 May 2005 under 37 CFR

1.53(d) based on parent Application No. 09/910,669 is acceptable and a RCE has been

established. An action on the RCE follows.

2.   The amendments filed on 5 May 2005, submitted with the filing of the RCE have been

received and entered. Claims 1-27 as amended are pending in the application.

Allowable Subject Matter

3.   Claims 9, 18 and 27 are objected to as being dependent upon a rejected base claim, but

would be allowable if rewritten in independent form including all of the limitations of the base

claim and any intervening claims.

4.   The following is a statement of reasons for the indication of allowable subject matter:

Claims 9, 18 and 27 each identify the distinct feature of "assigning at least one label of the

labeled at least two buttons among the two or more buttons on the one or more displayed pages

on the basis of an optimization procedure selected from an optimization-procedure group

including a gradient descent substantial optimization procedure and a simulated annealing

substantial optimization procedure". The closest prior art, Wagner et al. U.S. Patent 6,002,395,

teaches a method of building a graphical user interface via substantially optimizing the screen

premium. The prior art fails to teach an optimization procedure selected from an optimization-

procedure group including a gradient descent substantial optimization procedure and a simulated

annealing substantial optimization procedure and thus fails to anticipate or render the above

limitations obvious.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999

(AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002

do not apply when the reference is a U.S. patent resulting directly or indirectly from an

international application filed before November 29, 2000. Therefore, the prior art date of the

reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA

35 U.S.C. 102(e)).

5.   Claims 1-5, 10-14 and 19-23 are rejected under 35 U.S.C. 102(e) as being anticipated by

Wagner et al. U.S. Patent 6,002,395.

Referring to claims 1, 10 and 19, Wagner et al. teach a method and system comprising

means and circuitry (the developmental computing system comprising a processor, memory, and

display taught in the Wagner et al. reference comprises circuitry) (column 3, lines 18-30) for

accepting user input specifying a geometrical arrangement of two or more buttons on one or

more displayed pages (using the GUI builder to specify a placement of buttons such as

"PIZZAS", "SANDWICHES", "COFFEE", etc. in the sample pizza shop application shown in

Figure 2A, which is an example of the reference's teachings) (column 2, lines 21-28, column 3,

lines 45-52 and column 4, lines 36-53), means and circuitry for accepting user input labeling at

least two of the two or more buttons on the one or more displayed pages (naming the titles of the

buttons shown in Figure 2A; for example, assigning the name "SPECIAL DELUX" to button

represented by reference number "211-3") (column 4, lines 37-46 and further shown Figures 3A-

3C, which show controls representing the position and name of the desired button on the GUI),

means and circuitry for accepting user input defining at least one interaction between the labeled

at least two buttons (relationships between buttons, for example, pressing the "BEER" button in

Figure 2A deletes and replaces the buttons in the "DRINK" screen) (column 4, lines 54-62),

means and circuitry for accepting user input specifying at least one constraint cost for the defined

at least one interaction (parent child relationship between screens and buttons; for example, it

can be seen that the buttons "PIZZAS", "SPECIAL PEPPERONI", "SPECIAL DELUX" and

"SPECIAL VEGGIE" would need to be placed together under the "PIZZA" category in Figure

2A) (column 4, lines 11-21 and 36-47), and means and circuitry for automatically assigning

labels of the at least two buttons among the two or more buttons on one or more displayed pages

such that the at least one constraint cost is substantially optimized (controls shown in Figures

3A-3C associated with each button shown in Figures 2A-2D; for example, in order to optimize

screen space, related items such as "PIZZAS", "SPECIAL PEPPERONI", "SPECIAL DELUX"

and "SPECIAL VEGGIE" would be automatically labeled and placed together under the

"PIZZA" category; as another example, when the "Beer" button is pressed, only the "Drinks"

screen is automatically deleted and replaced, or labeled with new buttons, i.e. Wagner inherently

teaches automatically arranging the multiple screens for the touch screen display in order to

optimize parent/child relationships, interactions of buttons and screen space) (column 4, lines 1-

62 and column 13, lines 32-67 and Figure 4). This is further recited in column 17, lines 1-10,

column 26, lines 5-35 and shown in Figures 5B and 5C, where logic is given to modify and move

buttons and screens according to their relationships.

Referring to claims 2, 11 and 20, teaches accepting user input specifying one or more

sizes of the one or more displayed pages, as recited in column 17, lines 1-10.

Referring to claims 3, 12 and 21, teaches accepting user input specifying two or more

locations (positions) of the two or more buttons on the one or more displayed pages, as recited in

column 8, lines 61-67 and column 9, lines 1-4 and lines 34-52.

Referring to claims 4, 13 and 22, teaches accepting user input labeling (naming) at least

two buttons on a first displayed page presented to the user, as recited in column 4, lines 11-21

and column 24, lines 16-24.

Referring to claims 5, 14 and 23, teaches accepting user input labeling at least one button

on a first displayed page presented to the user and accepting user input labeling at least one

button on a second displayed page presented to the user (for example, labeling the button "211-

2" as "SPECIAL PEPPERONI" in Figure 2A on the first displayed screen, and the button "231-

7" as "INDIVIDUAL PAN" in Figure 2D on a subsequently displayed screen) (column 4, lines

11-21 and column 24, lines 16-24).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

6.   Claims 6-7, 15-16 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Wagner et al. U.S. Patent 6,002,395, as applied to claims 1, 10 and 19 above, and further in

view of Ikemoto U.S. Patent 5,969,717.

Referring to claims 6, 15 and 24, while Wagner et al. teach all of the limitations as

applied to the claims above, they fail to explicitly teach accepting user input identifying at least

one relationship between the labeled at least two buttons selected from a group including a Fitt's

movement interaction, a Euclidean-distance interaction, a city-block distance interaction, an x-

directed interaction and a y-directed interaction. Ikemoto teaches a method for specifying an

arrangement of at least two buttons in building a GUI (column 2, lines 32-46 and further shown

in Figure 1) similar to that of Wagner et al. In addition, Ikemoto further teaches identifying the

relationship between buttons including a position and distance interaction of the buttons (x-

directed distance between components and y-directed distance between components) (column 6,

lines 56-59, column 7, lines 1-7 and column 10, lines 29-44). Fitt's movement interaction,

Euclidean-distance interaction, a city-block distance interaction, a x-directed interaction and y-

directed interaction are all distance related relationships and therefore, could be included in the

group of relationships defined between the labeled buttons. It would have been obvious to one

of ordinary skill in the art, having the teachings of Wagner et la. and Ikemoto before him at the

time the invention was made, to modify the GUI building method of Wagner et al. to include the

use of distance related metrics to define relationships between GUI components, as taught by

Ikemoto. One would have been motivated to make such a combination in order to create an

efficient interactive process between the user and the GUI builder program; by allowing the users

to specifying exactly the distance between each and every component on the display screen,

users will be able to create an interface customized to their preferences and needs.

Referring to claims 7, 16 and 25, while Wagner et al. teach all of the limitations as

applied to the claims above, they fail to explicitly teach specifying at least one constraint cost for

the at least one interaction selected from a group including a global-difficulty cost, a pages-to-

close-buttons cost, a pages-to-fixed buttons cost, a path-difficulty cost, a pages-to-far buttons

cost, and a parent-to-child variability cost. Ikemoto teaches a method for specifying a

relationship and interaction between components of a GUI (column 13, lines 25-42 and further

shown in Figures 12 and 14) similar to that of Wagner et al. In addition, Ikemoto further teaches

identifying the constraint cost for the interaction of components including a pages-to-far buttons

cost and a parent-child variability cost (components that are unrelated to each other are placed in

separate areas on the display screen and a consistent hierarchical parent-child display of

components) (column 13, lines 25-42 and further shown in Figures 12, 15A and 21). Global-

difficulty cost, a pages-to-close-buttons cost, a pages-to-fixed buttons cost, a path-difficulty cost,

a pages-to-far buttons cost, and a parent-to-child variability cost are all types of interaction

relationships between components and therefore, could be included in the group of constraint

cost relationships between GUI components. It would have been obvious to one of ordinary skill

in the art, having the teachings of Wagner et la. and Ikemoto before him at the time the invention

was made, to modify the GUI building method of Wagner et al. to include the use of constraint

costs for the interaction of GUI components, as taught by Ikemoto. One would have been

motivated to make such a combination in order to create an efficient interactive process between

the user and the GUI builder program; by allowing the users to specifying exactly what factors

and relationships are the most important in placing components on the display screen, users will

be able to create an interface customized to their preferences and needs.

7.   Claims 8, 17 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Wagner et al. U.S. Patent 6,002,395, as applied to claims 1, 10 and 19 above, and further in view

of Shimogori U.S. Patent 5,973,686.

        Referring to claims 8, 17 and 26, while Wagner et al. teach all of the limitations as

applied to the claims above, they fail to teach accepting user input specifying at least one

weighting factor to be associated with the specified at least one constraint cost. Shimogori

teaches creating display parts (such as buttons) for a GUI and rules for governing the conversion

of display parts similar to the re-labeling of buttons according to costs of Wagner et al. In

addition, Shimogori further teaches at least one weighting factor (weight information) associated

with the specified at least one cost (rules), as recited in column 2, lines 17-29 and column 14,

lines 51-60. It would have been obvious to one of ordinary skill in the art, having the teachings

of Wagner et al. and Shimogori before him at the time the invention was made, to modify the

GUI builder method and system taught by Wagner et al. to include the weighting factor of

Shimogori. It would have been advantageous for one to utilize such a combination in order to

allow users to define priorities and rank the rules in order of their importance when creating a

GUI, ensuring more user satisfaction with the GUI's look and operations.

Response to Arguments

8.   Applicant's arguments filed on 5 May 2005 have been fully considered but they are not

persuasive:

9.   Applicant asserts that Wagner fails to teach " accepting user input specifying at least one

constraint cost for the defined at least one interaction; and automatically assigning the labels of

the at least two buttons among the two or more buttons on one or more displayed pages such that

the at least one constraint cost is substantially optimized". The examiner respectfully disagrees.

The applicant stated that the examiner has failed to identify where, specifically, the prior art of

record discloses "constraint cost", as claimed, that are optimized for the automatic assignment of

button labels. The examiner respectfully points out that one type of constraint cost defined by

the applicant is parent/child relationships under "parent to child variability" on page 23, lines 45-

56 of the specification of the present application. Wagner teaches a method of building a

graphical touch screen interface that optimizes screen premium. Wagner further teaches

assigning parent/child relationships to objects, such as the parent Pizza unit 211 having four

child button objects 211-1, 211-2, 211-3 and 211-4, shown in Figure 4 and the parent Drink unit

having 8 child button objects including the "Beer" object. This is further recited in column 4,

lines 11-62. Therefore, Wagner specifically teaches user input specifying the constraint cost of

parent/child relationships. Furthermore, Wagner teaches the optimization of a constraint cost

such as screen space via the placement/labeling of buttons. Wagner teaches displaying buttons

within the same unit together on the touch screen display so that for example, the four children

pizza buttons are displayed together under the parent "Pizza" screen, the eight children drinks

buttons are displayed together under the parent "Drinks" screen, etc., as shown in Figure 4 and

recited in column 4, lines 11-62. In addition, the multiple screens are displayed together so that

pressing of a button causes only part of the display to be destroyed; as an example, if the "Beer"

button is pressed, then only the children buttons under the parent "Drinks" screen 202 need to be

deleted and replaced while the other three screens 201, 203 and 204 remain, as shown in Figure 4

and recited in column 4, lines 48-62. In other words, when the "beer button is pressed, a new

menu with newly labeled buttons automatically replace only the "Drinks" menu. Therefore, by

positioning and labeling related buttons together on the touch screen and automatically replacing,

i.e. labeling buttons upon a certain user input, the parent child relationships of the buttons on the

screen and the premium of screen space are substantially improved. This shows an inherent

optimization of parent/child relationships of assigned buttons and the amount of available screen

space within the constraints of the "Drinks" menu.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Ting Zhou whose telephone number is (571) 272-4058. The

examiner can normally be reached on Monday - Friday 7:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Cabeca can be reached at (571) 272-4048. The fax phone number for the

organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

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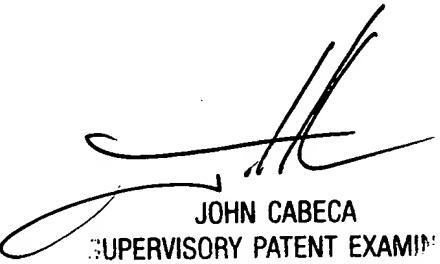
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